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ABSTRACT

To identify the aptitude profile of successful guidance counselors, tests were administered to 49 guidance counselors (14 male, 35 female) ranging in age from 29 to 62 (Mean age 42) and having an average of 9.5 years experience. The findings indicated that guidance counselors as a group scored near or above the Johnson O'Connor Research Foundation's population median on all tests in the Foundation's aptitude test battery. Counselors tended to have above-average Ideaphoria (the flow of their ideas was high) and Inductive Reasoning (they were quick to see relationships among separate facts). These abilities should allow counselors to diagnose problems, find various solutions, and communicate their ideas to others. In addition, counselors scored high on Foresight (the ability to focus on distant goals). This ability is useful in occupations requiring a great deal of training, such as guidance counseling; all but one counselor in this sample had earned a college degree, and 92% also had a graduate degree. Counselors were also above-average on Graphoria (suggesting that they do clerical tasks quickly and accurately), Silograms (suggesting good memory for words), and Finger Dexterity. The high scores on these last three aptitudes are more difficult to interpret. (Author/LPG)

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APTITUDES OF GUIDANCE COUNSELORS

Joseph Tal

JOHNSON O'CONNOR RESEARCH FOUNDATION

HUMAN ENGINEERING LABORATORY

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Aptitudes of Guidance Counselors

by Joseph Tal

Abstract

This report presents the results of analyses of bargraphs obtained from 49 guidance counselors. It is intended to identify the aptitude profile of successful guidance counselors. In doing so, the current report builds upon Technical Report 1982-1, which was based on a sample of 21 guidance counselors.

The findings indicate that guidance counselors as a group score near or above the Johnson O'Connor Research Foundation's (JOCRF) population median on all of the tests in the Foundation's battery. Counselors tend to have above-average Ideaphoria (the flow of their ideas is high) and Inductive Reasoning (they are quick to see relationships among separate facts). These abilities allow counselors to diagnose problems, find various solutions for these problems, and communicate their ideas to others. In addition, counselors score high on Foresight (they have vision--the ability to keep their minds on distant goals). This ability is useful in occupations that require a great deal of training, such as guidance counseling; all but one of the counselors in this sample have earned a college degree, and 92% have a graduate degree as well. Counselors are also above-average on Graphoria (they do clerical tasks quickly and accurately), Silograms (they have a good memory for words), and Finger Dexterity. Their high scores on the latter three aptitudes do not have a ready explanation. The result obtained for Graphoria is consistent with that reported in a study conducted by the United States Department of Labor (1970). However, the same study reported significantly low finger dexterity scores for guidance counselors.

Introduction

The purpose of the present report is to identify the aptitude profile of successful guidance counselors. In doing so, the current report builds upon Technical Report 1982-1, which presented the results of analyses conducted on bargraph data from a sample of 21 guidance counselors. Since that time, bargraphs for an additional 28 counselors have been obtained. The analyses reported in this paper are based on the total sample of 49 counselors.

For the purpose of reference it may be noted that the current Summary Manual (1986) for the Foundation reports the following profile for counselors (p. 27): (a) Counselors can be either objective or subjective (when dealing with people, they may react from a general, objective viewpoint or from a personal, subjective viewpoint). (b) Counselors score high on Ideaphoria and Inductive Reasoning. (c) Counselors score low on structural visualization (the ability to visualize an object in three dimensions, imagining how a solid object will look when taken apart or viewed from a different angle).

Method

Sample

The majority of the 49 counselors were tested as part of the Foundation's public information program. The others were tested as regular examinees or through the Foundation's scholarship testing program. Of the 49 counselors, 14 were male and 35 were female, with an average age of 42 years (range 29-62). They had worked in public schools, in private schools, or as self-employed consultants for an average of 9.5 years (range 4-25). Thirty-two held Master's degrees in counseling, and one held a Ph.D. in that field. Of the others, one had a Ph.D. in psychology, and 11 had Master's degrees in other fields, while three had Bachelor's degrees in other fields. One counselor had no formal degree.

Statistical procedures

The data for the complete sample of 49 counselors were collected over a period of six years. Because of changes in administration and scoring procedures used during this period, it was decided to use percentiles rather than raw scores in all of the analyses. The percentile scores obtained for each individual were based on the norms in use at the time of the individual's test administration.

Analysis of this data set was complicated by the fact that the mean age of the counselors in this group was 42. The oldest norm group for most Foundation tests is about age 30 and older. The sample of counselors used in this study includes a larger percentage of individuals who are 45 and older than the oldest Foundation norm group. Consequently, measures of central tendency for this sample

may be biased because this sample is older, on the average, than the norm group to which they are being compared. To correct for this possible source of bias, the analyses were repeated after excluding the eight oldest individuals in this sample (ages 49 and older). This resulted in a group with a mean age of 40, which is comparable to the oldest norm group on most tests. Significance testing between the older and younger groups was not feasible because of the small sample size of the older group (n = 8).

Analyses were further complicated by the fact that norms for two of the Foundation's tests, Wiggly Block and Paper Folding, were constructed using the scores of males only; the mean for females on these tests is considerably lower than that of males. Because 70% of the sample used consisted of females, it was expected that measures of central tendency for these guidance counselors would be underestimated relative to the norm group to which they were compared. To correct for this, a constant was added to females' scores before significance testing was conducted. The constant was computed by subtracting the female mean from the male mean on the two tests obtained from the Foundation's 1984 national database. For Wiggly Block these means were obtained from a sample of 1702 males and 1633 females; for Paper Folding the means were calculated from a sample of 3951 males and 3875 females.

The Kolmogorov-Smirnov one-sample test was employed for all significance testing. For this test the distribution of obtained scores for each worksample was compared to a uniform distribution having a maximum value of 99 and a minimum value of 1. A significant result indicates that the shapes of the two distributions differ. Typically, this implies that a difference exists between the medians of the two distributions and that this difference cannot be adequately explained by chance factors.

Results

Table 1 shows the mean and median percentile ranks obtained for the full group of guidance counselors, as well as the results of significance testing. Table 2 displays the means and associated 90% confidence intervals obtained for this group of counselors for all of the tests. Discrepancies between the results obtained for the younger group (age 48 and under) and those obtained for the complete sample are noted in Table 3. Results were considered discrepant only when the degree of significance for a test was less than .05 for one group and .10 or greater in the other.

Table 1

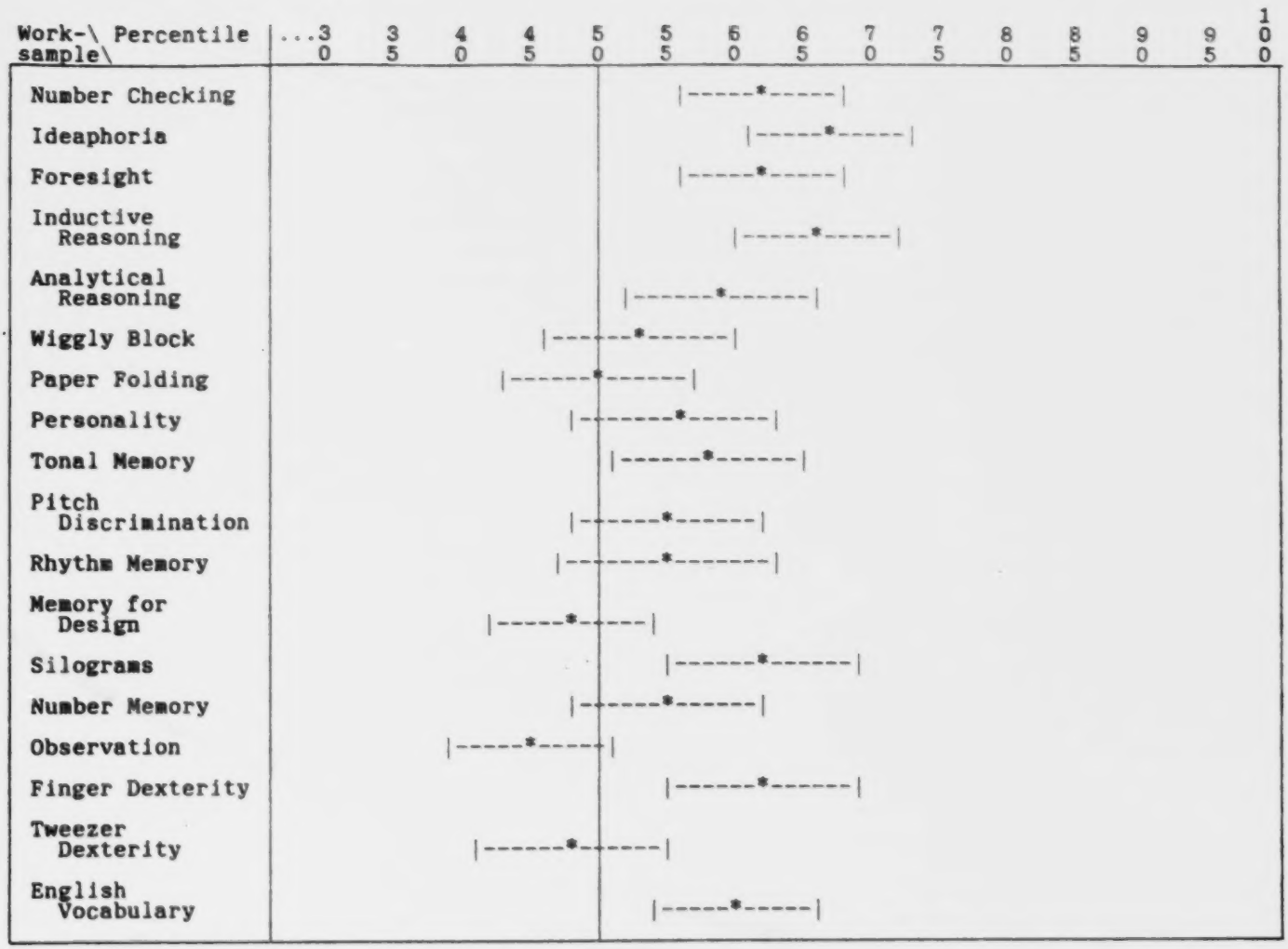
Summary of Worksample Scores and Significance Test Results for the Complete Sample of Guidance Counselors

Worksample	N	Median sample % rank	Mean sample % rank	% above 50th percentile	p[a]
Number Checking	48	65.0	62.2	68.7	<.01
Ideaphoria	49	70.0	67.3	73.5	<.01
Foresight	49	67.0	61.7	69.4	<.01
Inductive Reasoning	49	73.0	66.0	75.5	<.01
Analytical Reasoning	49	55.0	58.9	59.2	<.05
Wiggly Block[b]	49	50.0	53.0	55.1	=.20
Paper Folding[b]	38	49.0	49.8	44.7	>.20
Personality[c]	49	64.0	55.6	55.1	<.05
Tonal Memory	49	60.0	58.4	55.1	<.05
Pitch Discrimination	47	63.0	55.2	57.4	<.20
Rhythm Memory	49	55.0	55.4	55.1	=.05
Memory for Design	49	45.0	47.7	42.9	>.20
Silograms	48	63.0	61.8	69.8	<.01
Number Memory	49	60.0	55.4	59.2	>.20
Observation	49	45.0	44.8	38.8	<.05
Finger Dexterity	48	67.5	61.6	68.7	<.01
Tweezer Dexterity	49	55.0	48.4	51.0	>.20
English Vocabulary	49	60.0	59.6	63.3	<.05

[a] Based on Kolmogorov-Smirnov one-sample test.
[b] Scores of females were corrected to reflect average differences between males and females.
[c] Analyses done on percentile rather than certile scores.

Table 2

Guidance Counselors' Data: Means and Associated 90% Confidence Intervals



Note. The 90% confidence interval for a mean represents an interval that has a 90% likelihood of containing the true population mean.

Table 3

Summary of Worksample Scores on Which Significance Tests Revealed a Discrepancy Between the Complete and Younger Samples

	Complete Sample				Younger Sample			
Worksample	Median	Mean	% above 50th percentile	p	Median	Mean	% above 50th percentile	p[a]
Analytical Reasoning	55.0	58.9	59.2	<.05	55.0	56.6	58.5	<.20
Personality[b]	64.0	55.6	55.1	<.05	58.0	52.6	51.2	=.20
Rhythm Memory	55.0	55.4	55.1	<.05	55.0	55.9	53.7	<.20
English Vocabulary	60.0	59.6	63.3	<.05	60.0	57.2	58.5	<.20

[a] Based on Kolmogorov-Smirnov one-sample test.
[b] Analyses done on percentiles rather than certiles.

Discussion

As noted earlier, the purpose of the current report is to identify the aptitude profile of successful guidance counselors. For the current study, the following criteria were set for the inclusion of an aptitude in the guidance counselor aptitude profile:

1. The result of significance testing for the full group yielded a significance level .05 or less.
2. The level of significance remained .05 or less after excluding the eight in this sample who were 49 and older. It was assumed that results that reflect the true characteristics of the general guidance counselor population would remain stable across both younger and full samples. Thus, discrepancies (noted in Table 3) were taken to indicate that the results in question were probably a function of the age of this particular sample rather than a characteristic of guidance counselors in general.
3. At least 60% of the counselor sample scored above the 50th percentile.

Because the current sample consisted of only 49 individuals, an aptitude was also required to have met at least one of the following

criteria before being included in the counselor aptitude profile:

1. The aptitude is functionally related to success in this profession.
2. The result obtained in this study is corroborated by other research.

The guidance counselors in this sample scored significantly ($p < .05$) higher than the general population of Foundation examinees on a large number of worksamples. However, as noted above, only those worksamples on which 60% or more of this sample scored above the 50th percentile were considered as candidates for inclusion in the subsequent counselor profile. The worksamples that met the first three criteria are listed in Table 4 below.

Table 4

Worksamples on Which Counselors Met or Exceeded Criteria 1 Through 3

Worksample	% counselors above 50th percentile
Graphoria	68.7
Ideaphoria	73.5
Foresight	69.4
Inductive Reasoning	75.5
Silograms	69.8
Finger Dexterity	68.7

For all of the worksamples in the table above, the difference between guidance counselors and the Foundation's population was significant at the .01 level. Significance levels remained at .01 or less even when the analyses were repeated after reducing the sample size to 41 by excluding all individuals at or above the age of 49. Thus, these results are not attributable to the fact that this sample includes a larger percentage of individuals who are 45 and older as compared to the oldest Foundation norm group.

In addition to the worksamples mentioned in the previous paragraph, guidance counselors scored significantly above the Foundation's population median on the following worksamples: Analytical Reasoning, Personality, Tonal Memory, Rhythm Memory, and English Vocabulary. When analyses were repeated excluding older individuals, only the median of Tonal Memory remained significantly above the Foundation's population median. This discrepancy probably indicates that the significant results obtained for Analytical Reasoning, Personality, Rhythm Memory, and English Vocabulary are dependent on the advanced age of this sample rather than being an accurate reflection of the general counselor aptitude profile. While counselors' scores on Tonal Memory remained significant even after excluding the oldest members of this sample, only 55.1% scored above the 50th percentile on this worksample. This result does not

meet the third criterion for the inclusion of this aptitude for consideration in the counselor aptitude profile.

The picture of guidance counselors that emerges from this sample is similar, though not identical, to that which emerged from Technical Report 1982-1. This, of course, is not surprising because the bargraph data used for that earlier report were included in thisone as well.

As in the earlier study (Technical Report 1982-1), guidance counselors scored high on Ideaphoria and Inductive Reasoning. The authors of that study wrote:

> Ideaphoria is thought to be useful because of the counselors' need to express themselves easily and fluently. The combination of Ideaphoria and Inductive Reasoning is thought to be helpful in fields where one must diagnose a problem (by seeing the implications of a set of facts) and come up with a number of possible solutions or approaches. (p. 3)

The guidance counselors examined in the current study scored significantly above the JOCRF population median on Foresight as well. Technical Report 1982-1 reported a result that approached statistical significance for this worksample. Brehler (1981) suggests that a positive relationship exists between Foresight and educational attainment. Since individuals high on this aptitude possess the ability to keep in mind a distant goal, they are better equipped for the rigors of higher education, which presents relatively few short-term rewards. As a general rule, in order to be a guidance counselor an individual must have at least completed an undergraduate degree. All but one of the counselors in this sample have an undergraduate degree, and 92% hold a graduate degree as well.

The counselors participating in the current study also scored significantly above the JOCRF population median on Graphoria, Silograms, and Finger Dexterity. These results are not easily explained. Nevertheless, a study reported in the manual for the General Aptitude Test Battery (United States Department of Labor, 1970) also found the clerical aptitude of counselors to be significantly high. However, the same study reported finger dexterity scores for guidance counselors that were significantly low. This finding is inconsistent with the result obtained in the current study. Thus, until further research is conducted to clarify this point, Finger Dexterity should not be used in constructing the aptitude profile of guidance counselors. Significance testing for this aptitude was not mentioned in Technical Report 1982-1.

The guidance counselors participating in the earlier study (Technical Report 1982-1) scored significantly high on Pitch Discrimination. The authors of the study wrote that this "finding . . . was not expected and is difficult to interpret." (p. 3)

This result was not replicated in the current sample. Because the finding failed to replicate with the inclusion of additional bargraphs, it is probably safe to assume that the earlier result was due to an anomaly in that sample and is not a general characteristic of guidance counselors.

Conclusion

In summary, guidance counselors as a group are close to, or above, the Foundation's client population median on all of the tests in the Johnson O'Connor battery. Not surprisingly, they are high on Inductive Reasoning, Foresight, and Ideaphoria. These aptitudes assist them in diagnosing problems, identifying various solutions for problems, and communicating their thoughts to clients. Guidance counselors were also found to be significantly high on Graphoria, Silograms, and Finger Dexterity. These results are not as easily explained. The finding that counselors excel in clerical aptitude is consistent with that obtained in a study conducted by the United States Department of Labor (1970). The finding that counselors excel in finger dexterity is inconsistent with that study.

Based on the inclusion criteria noted above, it is recommended that the counselor profile in the JOCRF Summary Manual be updated to reflect the results of the current study. Specifically, the counselor aptitude profile consists of the following characteristics:

1. Objective or subjective personality.
2. Higher than average scores on the following worksamples: (a) Graphoria, (b) Ideaphoria, (c) Foresight, and (d) Inductive Reasoning.

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Summary manual. (1986). New York: Johnson O'Connor Research Foundation.

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United States Department of Labor. (1970). Manual for the USES: General Aptitude Test Battery (Section III). Washington, DC: United States Government Printing Office.

APPENDIX A

List of Bargraph Numbers for Individuals Included in the Guidance Counselor Study

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23860
8735-4
11959-4
11983-4
13501-4
13525-4
19945-4
35215-4
35245-4
19011-6
22922-6
33452-6
37426-6
40774-6
108998-6
6-108998-6
13015-8
1138-11
18879-11
18880-11
4567-11
10664-11
10667-11
10670-11
4-108871-11
4-108873-11
4-108874-11
4-108876-11
4-108877-11
4-108880-11
33777-12
32962-14
34429-14
34573-14
34575-14
36875-14
4242-15
4244-15
11033-15
40283-15
11660-17
16869-17
18941-17
34021-17
21251-18
23937-18
26604-18
31896-18
39069-19

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